

PROJECT TITLE : ANALYTICAL INVESTIGATIONS
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TROUBLE-SHOOTING

More than 120 headspace analyses were performed upon request by Product Development and QC on 18 tobacco samples, 14 base and top flavours and 8 cigarette samples. Cigarette filler, paper and filters were analysed separately as were the packing materials (FMO).

80 tobacco and filter samples were extracted with methanol and hexane and the extracts were analysed by GC² using FID/EC detection (YVG/ETL).

LC profiles were run on a C₁₈ column for various flavour samples. Organic acids were analysed by HPLC on groups of tobacco samples as well as on a powder sample from Project LEAR (JJJP).

Carboxylic acids were determined on 14 tobacco RL and LTR samples by GC² (ETL).

Xylene residues on packing materials and filters were identified by headspace-GC²/MS. The evolution of CO₂, methanol and ethanol was confirmed by GC²/MS (ETL) on various tobacco, RL and LTR samples heated for 18 hours at 55°C.

Phthalate residues were identified by MS on samples taken during trouble-shooting visits (ETL).

CF (ETL)

CF values determined in European brands by GC (1) were confirmed by GC/MS. Results of the half-yearly check are given in Tables 1 and 2.

SERVICE FOR OTHER GROUPS

Routine analyses were performed for Biotechnology on potassium, calcium and magnesium (in 132 samples), phosphate and sulfate (133 samples) and alcohols (20 samples).

DMN/NPY and NNN/NNK /NAtB were analysed in the sidestream smoke of 26 prototype cigarettes submitted by Product Development (project COMPO) (2).

MISCELLANEOUS

The automatic amino acid analyser, Beckman Model 119 CL, was moved to Cortailod and is presently being installed (JJP).

A 20-port Borgwald smoking machine is being adapted for simultaneous MS and SS measurements of CO and NO with multiple smoking (JJP).

An HPLC method for amino acid quantitation on an NH₂-column with possible simultaneous quantitation of sugars is being worked out (JJP).

REPORTS WRITTEN

Genoud-Y., "Salamander", Technical Report, November 1981.

Lecoultre-E., "Aliphatic Alcohols (C₁-C₆), Acetone and Acetoin in Fermented Tobacco Extracts by Gas Chromatography", Analytical Method, November 1981.

REFERENCES

- (1) Lecoultre-E., PME Monthly Progress Report, October 1981.
- (2) Memo from Murray-M. to Erkohen-E., November 23, 1981.

WAF/jig/DECEMBER 1, 1981

Table 1

Country	Nb. of Brands analyzed	Nb. of Brands with CF
AU	8	-
BE	11	-
DK	5	4
FR	18	4
GR	6	1
DB	65	2
IT	26	3
NL	9	3
NO	5	5
SW	5	5
CH	26	1
GB	15	1
YU	9	-
TOTAL	208	29

Table 2

CF IN COMMERCIAL BRANDS

Country	Brand Name	CF (ppm) ⁽¹⁾	CF (ppm) ⁽¹⁾	Manufacturer
		1981	1980	
BN	Kent 100 S de luxe	(2)	10	BAT
	Carlton 100 S Menthol	(2)	54	American T.
	Winston King Size	(2)	10	Reynolds
DK	New Look Light	31	41	Skandin.T.
	New Look Super	24	44	Skandin.T.
	Prince	10	37	Skandin.T.
	Prince Light	22	32	Skandin.T.
	Savoy Extra Mild	(ND)	35	Skandin.T.
DU	Carlton 100 S	(2)	140	American T.
	Kent 100 S de Luxe	(2)	13	BAT
EG	Kent 100 S de Luxe	(2)	34	BAT
	Kent Golden Lights	(2)	18	BAT
	Cléopatre King Size	(2)	5	Eastern To.
	Cléopatre 100 S	(2)	5	Eastern To.
FR	Camel Filters	36	26	Reynolds
	Camel Mild	33	24	Reynolds
	Royale	5	80	Seita
	Winston King Size	34	27	Reynolds
GB	John Player KS Vanguard	7	10	Imperial T.
IT	Colombo	39	33	Monital It.
	Gallant	5	12	Monital It.
	Winston King Size	21	30	Reynolds
NL	Caballero	16	17	Laurens
	Camel Filters	27	36	Reynolds
	Reynolds No 1	39	44	Reynolds
	Roxy Dual	(ND)	6	Niemeyer
DB	Caballero Filter	11	(2)	Brinkmann
	Caballero Non Filter	23	(2)	Brinkmann

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Table 2 continued

Country	Brand Name	CF (ppm) ⁽¹⁾	CF (ppm) ⁽¹⁾	Manufacturer
		1981	1980	
NO	Pall Mall KS Filter Soft	(2)	23	Suomen Tup.
	Pall Mall KS Filter Box	21		Suomen Tup.
	Pall Mall Mild	24	26	Suomen Tup.
	Petteroe's King Size	7	25	Tiedemanns
	Prince Box	10	18	Tiedemanns
	Prince Mild Special	6	13	Tiedemanns
RL	Winston Light 100 S	(2)	6	Reynolds
	Cedars	(2)	15	Unknown
SF	Colt	(2)	20	Rettig STR
	Kent	(2)	16	Rettig STR
	L et M Box	(2)	3	STO Helsin
SI	Carlton 100 S	(2)	140	American T.
	Kent Golden Light	(2)	10	BAT
	Winston King Size	(2)	10	Reynolds
SW	Blend	21	32	Swedish T.
	Blend Extra	39	26	Swedish T.
	Commerce Light	10	20	Swedish T.
	Prince	21	18	Swedish T.
	Salem Light Menthol	37	42	Reynolds
CH	Camel Filters	26	23	Reynolds
	Camel Mild	(ND)	18	Reynolds
GR	Astor	(ND)	9	Papastrato
	Old Navy	40	80	Papastrato

ND = Not Detectable

(1) CF was determined by gas chromatography and confirmed by GC/MS

(2) cigarettes not received